

CLAIMS:

1. A dual-stack optical data storage medium (10) for write-once recording using a focused radiation beam (9) having a wavelength λ of approximately 655 nm and entering through an entrance face (8) of the medium (10) during recording, comprising:
 - at least one substrate (1, 7) with present on a side thereof;
 - 5 - a first recording stack (6), named L0, comprising a write-once type L0 recording layer, said first recording stack L0 having an optical reflection value R_{L0} and an optical transmission value T_{L0} ,
 - a second recording stack (3), named L1, comprising a write-once type L1 recording layer, said second recording stack L1 having an effective optical reflection value
 - 10 R_{L1eff}

said first recording stack being present at a position closer to the entrance face than the second recording stack,

 - a transparent spacer layer (4) sandwiched between the recording stacks (3, 6), characterized in that
 - 15 $0.12 \leq R_{L0} \leq 0.18$ and $0.12 \leq R_{L1eff} \leq 0.18$.
 2. A dual-stack optical data storage medium as claimed in claim 1, wherein $0.15 \leq R_{L0} \leq 0.18$ and $0.15 \leq R_{L1eff} \leq 0.18$.
 - 20 3. A dual-stack optical data storage medium as claimed in any one of claims 1 or 2, wherein R_{L0} is substantially equal to R_{L1eff} .
 4. A dual-stack optical data storage medium as claimed in any one of claims 1, 2 or 3, wherein the first recording stack comprises a first reflective layer (5) with a thickness
 - 25 d_{L0M} and an absorption coefficient k_{L0M} and the L0 recording layer has an absorption coefficient k_{L0R} and a thickness d_{L0R} and where
- $$(k_{L0R} * d_{L0R} + k_{L0M} * d_{L0M}) < 0.08 * \lambda.$$

5. A dual-stack optical data storage medium as claimed in any one of claims 1, 2, 3 or 4, wherein the second recording stack comprises a second reflective layer (2) and the L1 recording layer has an absorption coefficient k_{L1R} and where the intrinsic reflection R_{L1} of the second recording stack is in the range 0.30 – 0.60 and where $0.075 < k_{L1R} < 0.25$.
- 5 6. A dual-stack optical data storage medium as claimed in any one of claims 4 or 5, wherein the first reflective layer (5) has a thickness $d_{L0M} \leq 16$ nm and mainly comprises one selected from Ag, Au or Cu.
- 10 7. A dual-stack optical data storage medium as claimed in claim 6, wherein the first reflective layer (5) has a thickness $d_{L0M} \leq 12$ nm.
8. A dual-stack optical data storage medium as claimed in any one of claims 1 - 7, wherein $k_{L0R} > 0.025$.
- 15 9. A dual-stack optical data storage medium as claimed in claim 8, wherein $k_{L0R} > 0.050$
10. A dual-stack optical data storage medium as claimed in any one of claims 1 to 9, wherein a guide groove (G) for L1 is provided in the transparent spacer layer (4).
- 20 11. A dual stack optical data storage medium as claimed in any one of claims 1 to 9, wherein a guide groove (G) for L1 is provided in the substrate (1).